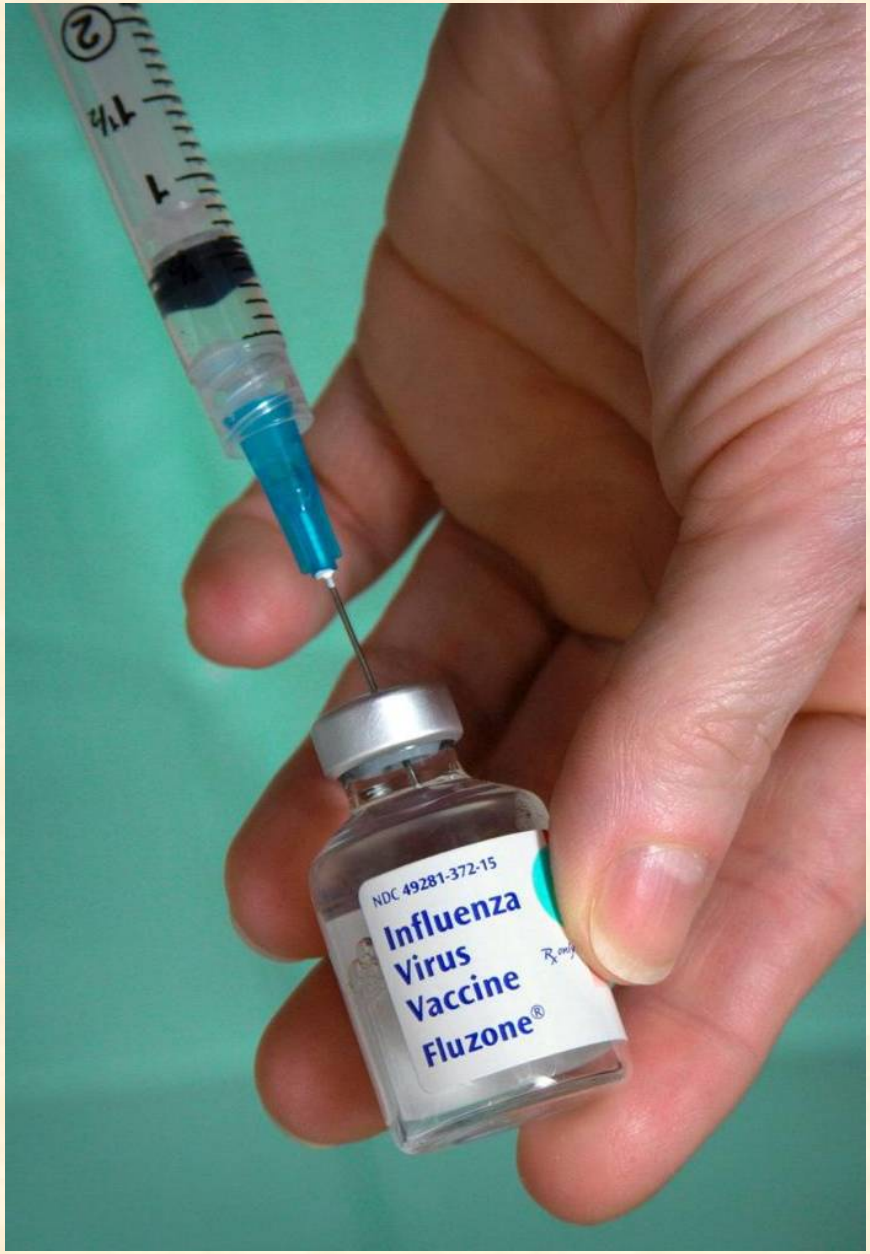
Influenza

Prevention and Control Conference Call

7 October 2008
Start: 12:30PM(CT) / 11:30 AM(MT)
Please start calling in a few minutes before the conference starts.
Toll Free Phone Number: ***1-888-296-1938***
Access Code: ***367834***



South Dakota Department of Health

. . . . Agenda. . . . .

- Scott Gregg: **Welcoming remarks**
- Colleen Winter: **Gov's child flu vaccination initiative**
- Lon Kightlinger: **Influenza prevention and control**
- Vickie Horan **Influenza surveillance in SD**
- Nato Tarkhashvili: **Use of Antivirals**
- Tim Heath: **Vaccine specific issues** (activated and live)
- Bonnie Jameson: **2008 vaccine supply, *"Stop It, Don't Spread it"*** and **"Why Flu Vaccination Matters"**
- All: **Discussion, Questions, Answers, Quiz.**

Colleen Winter
Health and Medical Services, Director

FOR IMMEDIATE RELEASE: Friday, September 26, 2008

State again offers free flu vaccine for kids

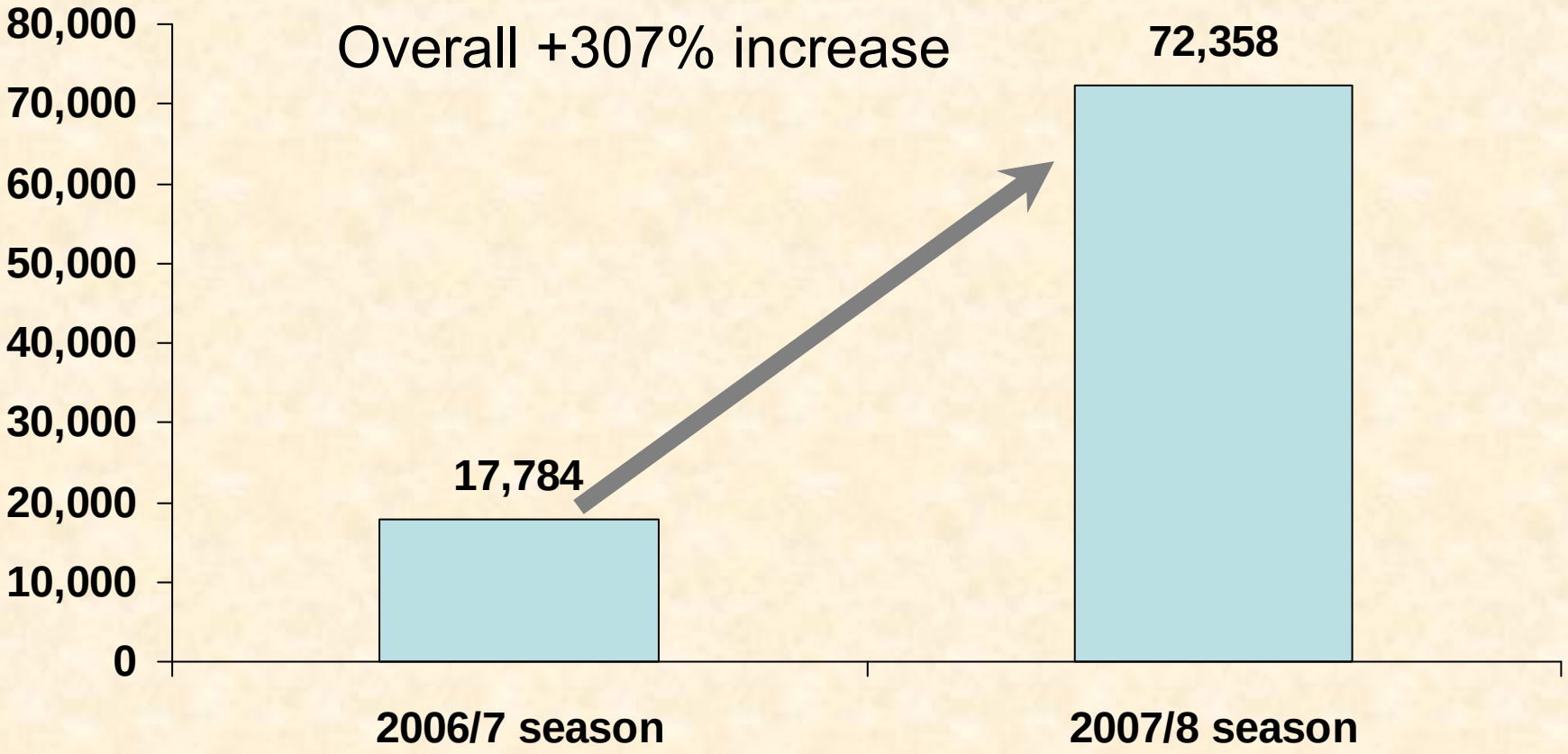
PIERRE, S.D. – South Dakota will offer free flu vaccine for kids aged 6 months through 18 years for the upcoming flu season, Gov. Mike Rounds announced today. South Dakota first launched the campaign during the 2007-2008 flu season, vaccinating more than 72,000 kids in the target age group, a 300% increase over the previous year.

"We were the first state in the nation to offer flu vaccines to all our children. Immunizing our kids protects them from the complications of flu and reduces spread of the disease in schools and communities," said Gov. Rounds. "We were very pleased earlier this year when the national Advisory Committee on Immunization Practices changed its recommendations for annual flu vaccination to also include all kids from 6 months through 18 years of age."

Child Influenza Vaccination Initiative

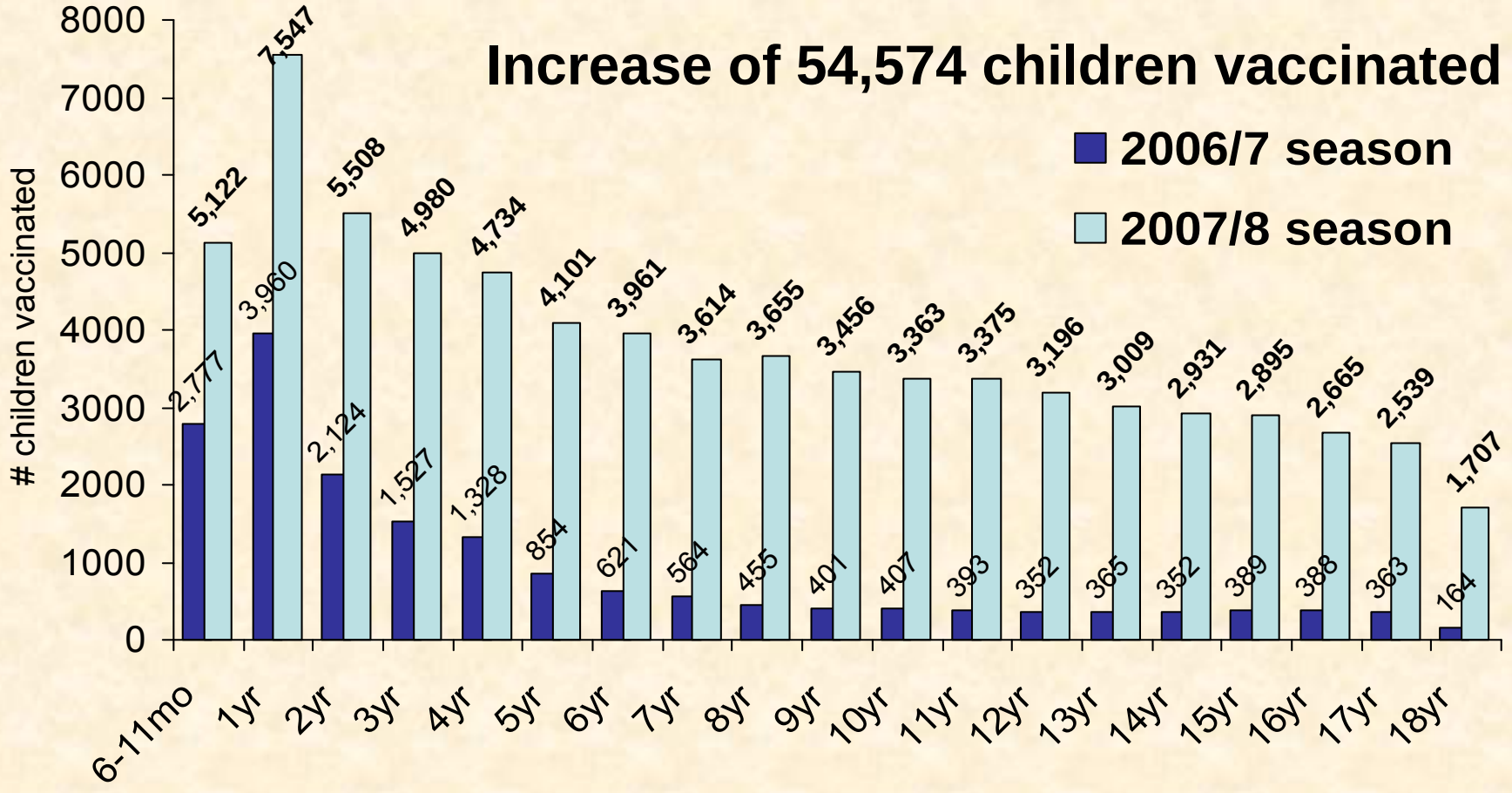

CDC recommends flu
vaccination every year
for children 6 months
through 18 years.

Children immunized for influenza* pre-initiative 2006/7 season and post-initiative 2007/8 season



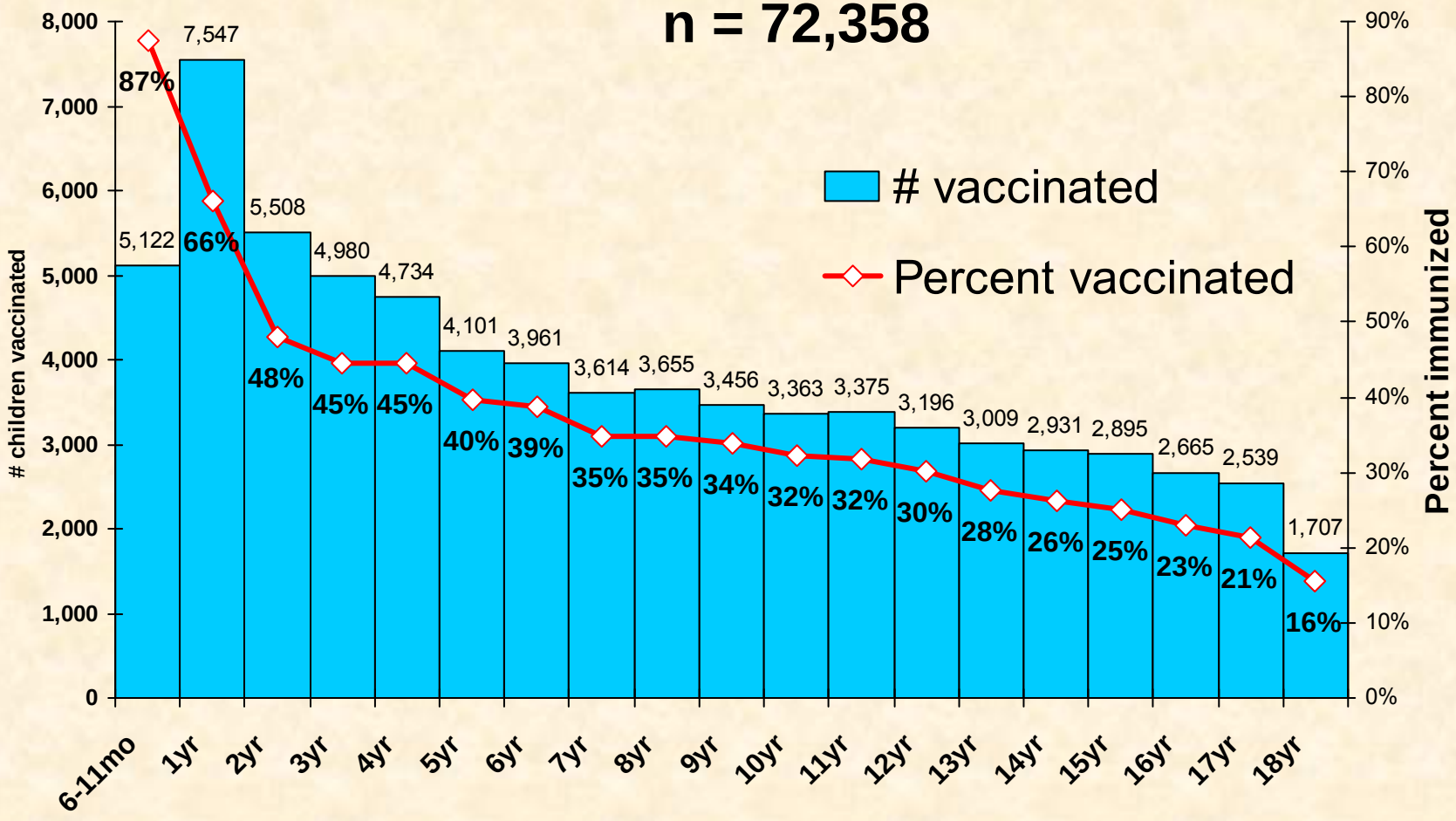
*All children receiving SDIIS recorded influenza vaccines, either 1-dose or 2-doses.

Children receiving influenza immunizations: comparing pre-initiative 2006/7 season with the post-initiative 2007/8 season.

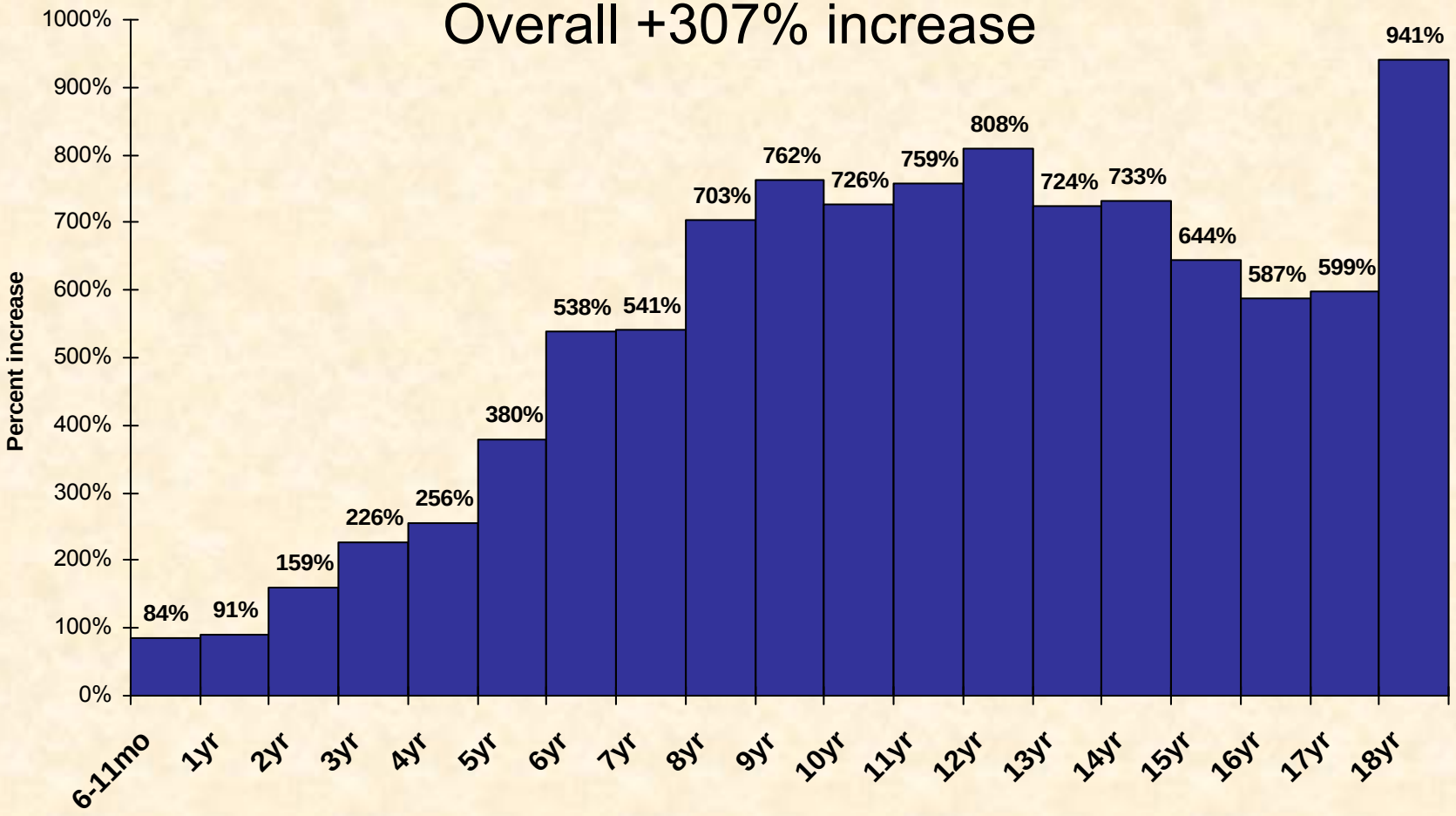


Percent of children by age immunized against influenza, South Dakota, 2007/8 season

Overall 35% of children vaccinated, n = 72,358



Percent increase by age of children immunized against influenza, South Dakota, 2006/7 to 2007/8 seasons



Percent adults aged 65+ who have had a flu shot within the past year (BRFSS 2007)

1. Rhode Island 80.0
2. Minnesota 79.6
3. Hawaii 78.5
4. Massachusetts 77.9
5. New Hampshire 77.6
6. South Dakota 77.4
7. Maine 77.2
8. Nebraska 76.8
9. Colorado 76.4
10. Wyoming 76.3
11. Utah 76.2
12. Oklahoma 76.1
13. Virginia 75.3
14. Connecticut 74.7
15. Vermont 74.7
16. Iowa 74.6
17. Wisconsin 74.1
18. Delaware 73.8
19. Kansas 73.5
20. Kentucky 73.2
21. Oregon 73.1
22. Montana 72.8
23. Pennsylvania 72.6
24. Ohio 72.5
25. North Dakota 72.4

USA 72.0

26. Washington 72.0
27. Indiana 71.9
29. Maryland 71.3
29. North Carolina 71.3
30. Michigan 70.9
31. West Virginia 70.7
32. New Jersey 70.6
33. Arkansas 70.5
34. New York 70.5
35. South Carolina 70.2
36. Tennessee 70.1
37. New Mexico 70.0
38. Mississippi 69.6
39. Missouri 69.5
40. California 69.3
41. Idaho 69.1
42. Alabama 69.0
43. Arizona 69.0
44. Louisiana 68.4
45. Illinois 68.1
46. Georgia 67.6
47. Texas 66.7
48. Florida 64.7
49. Alaska 64.4
50. Nevada 61.9
51. DC 60.2

Lon Kightlinger
State Epidemiologist

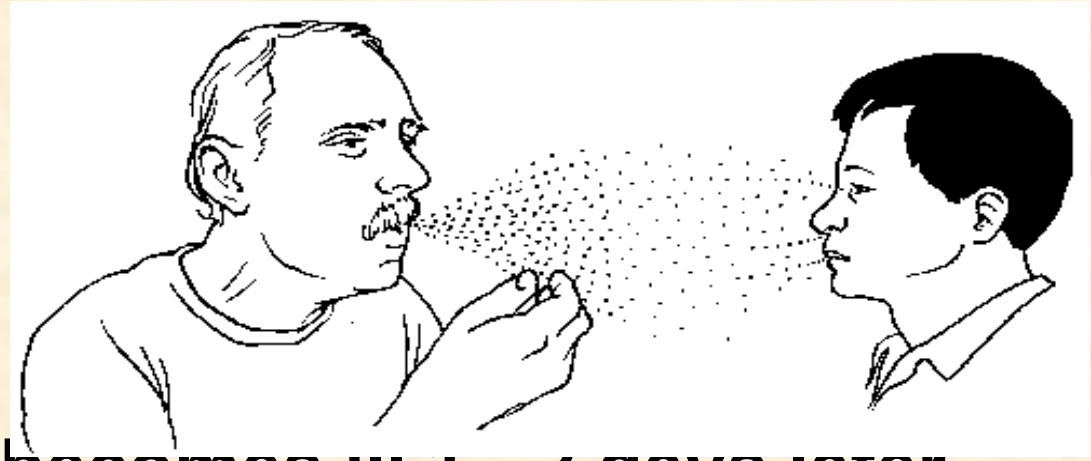
Influenza transmission prevention and control

Resources

- CDC influenza website: www.cdc.gov/flu
- South Dakota Influenza website: http://doh.sd.gov/Flu
- VIS (Vaccine Information Statement): www.cdc.gov/vaccines/pubs/vis/downloads/vis-flu.pdf
- CDC/ACIP. MMWR 8 August 2008. Prevention and Control of Influenza (ACIP recommendations) www.cdc.gov/mmwr/preview/mmwrhtml/rr5707a1.htm
- SD Public Health Bulletin, August 2008.
- 2008-09 Influenza Vaccination Pocket Information Guide

How influenza spreads

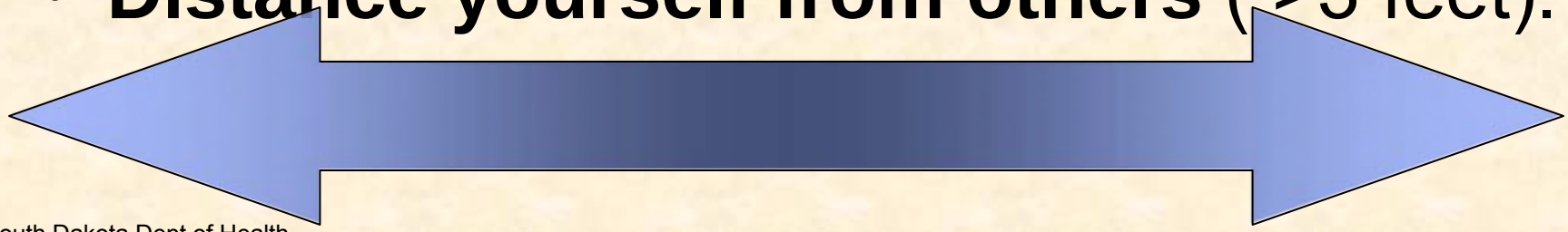
- **Virus in respiratory droplets produced while coughing, sneezing, talking.**
- **Usually spreads person to person. Sometimes spread via contaminated object.**



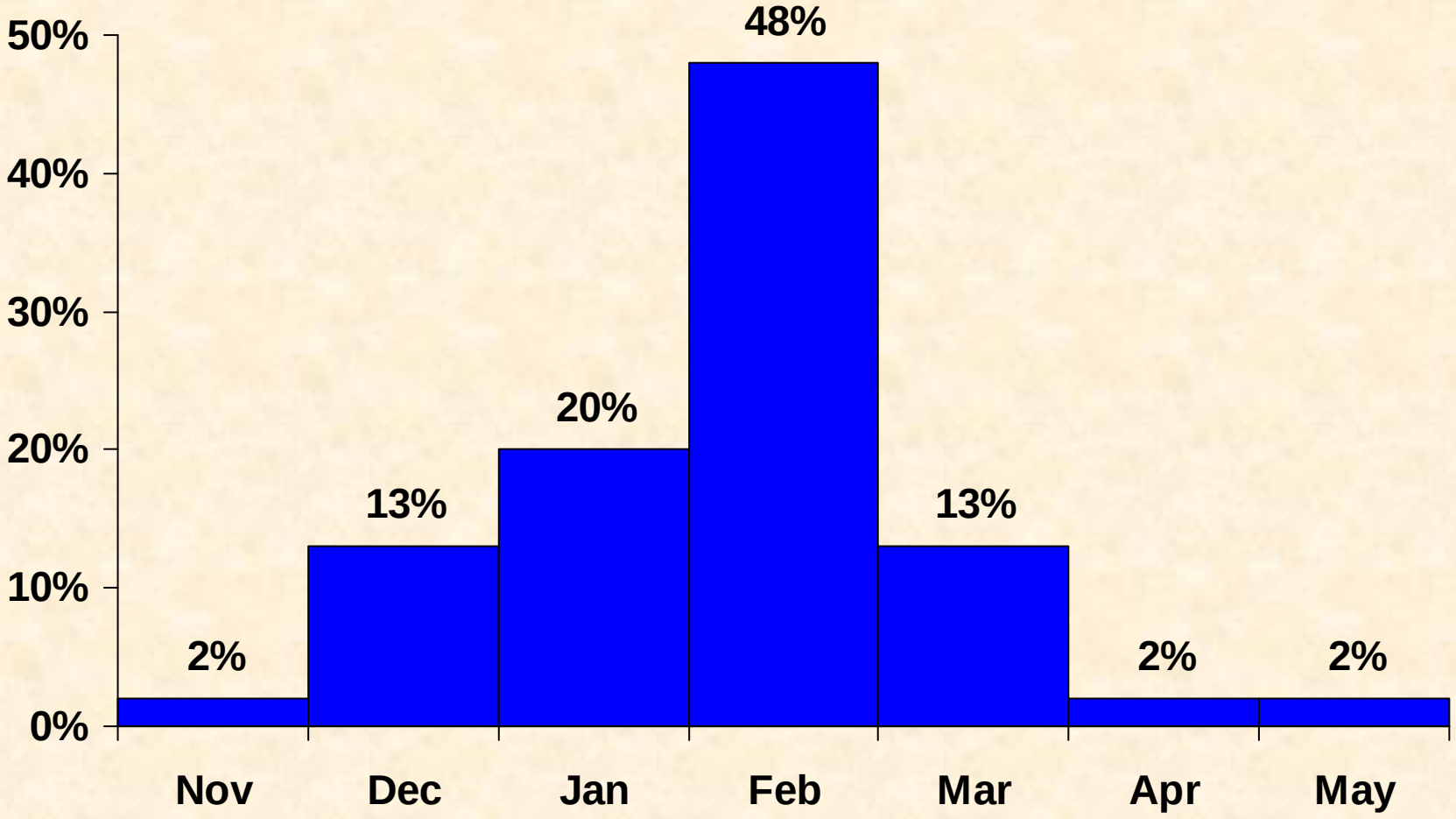
- **Person becomes ill 1 - 3 days later.**
- **Person is able to infect others 1 day before becoming ill or up to 7 days after getting ill.**

What is Respiratory Hygiene/ Cough Etiquette?

- **Cover mouth/nose when sneezing or coughing.**
  - If no tissue, use elbow instead of hands.
- **Use tissues and dispose of appropriately.**
- **Perform hand hygiene after contact with respiratory secretions.**
- **Distance yourself from others** (>3 feet).

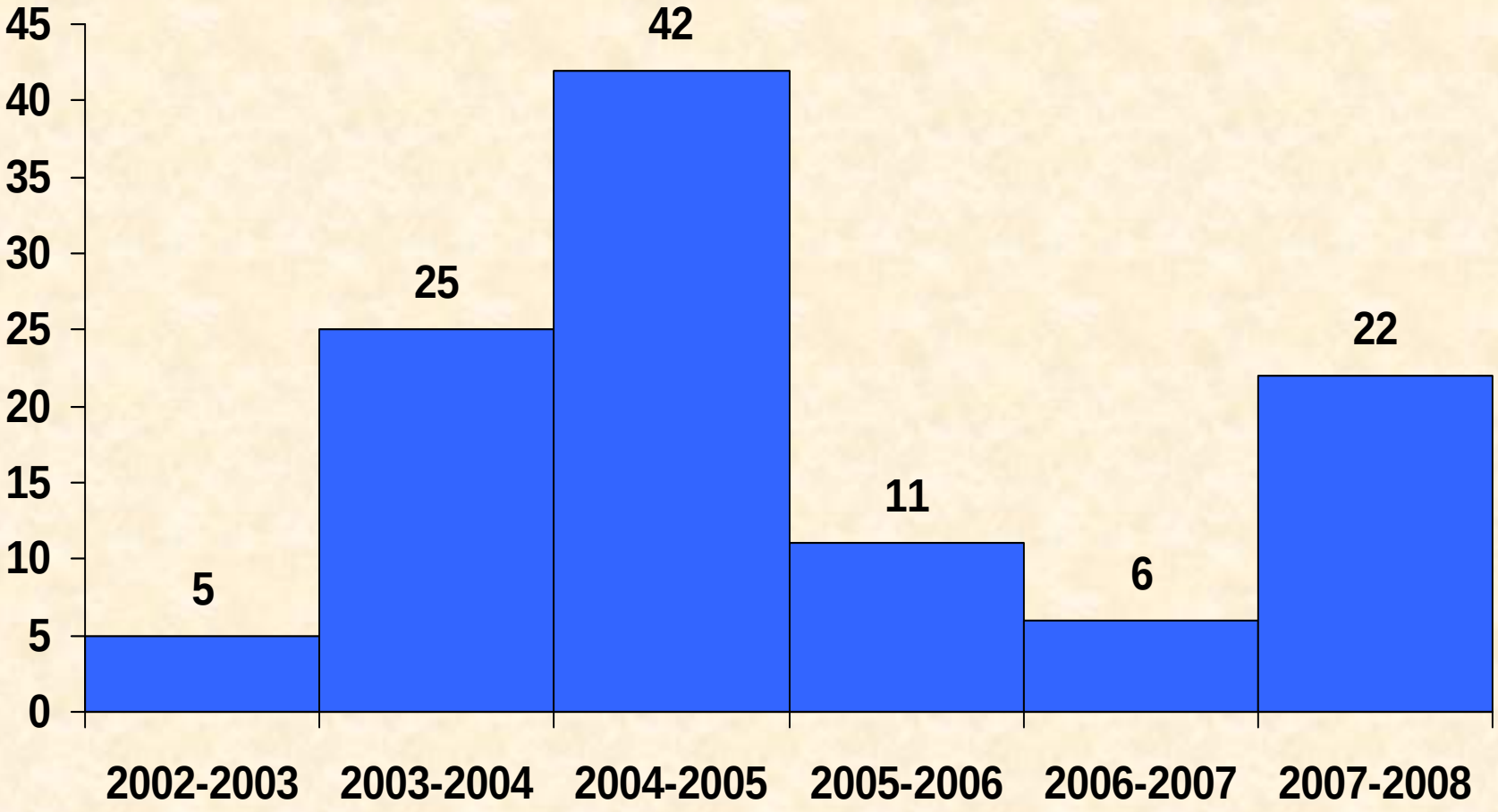


Month of peak influenza activity during 32 influenza seasons – USA, 1976-2008



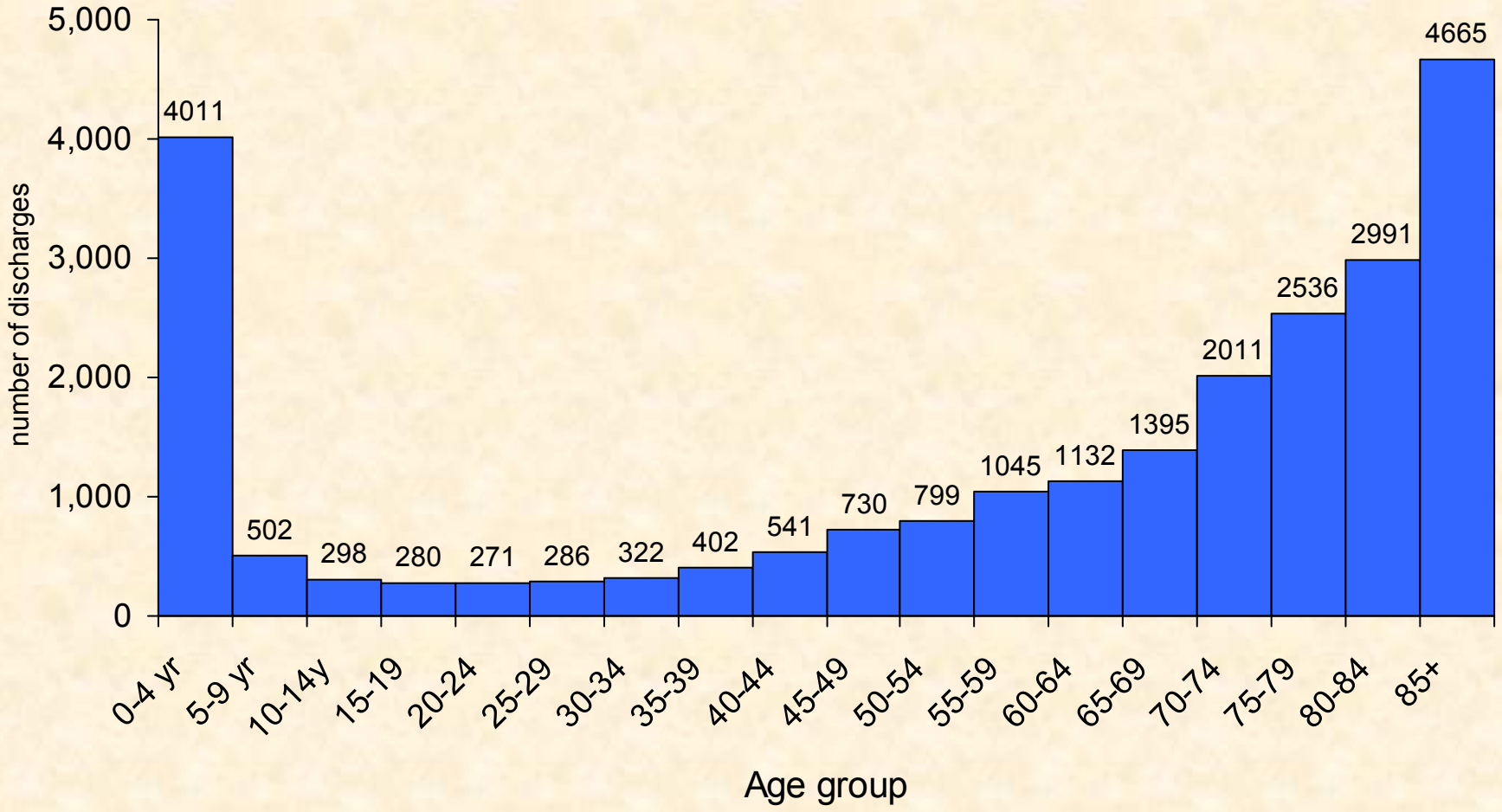
MMWR 8 August 2008. Prevention and Control of Influenza (ACIP recommendations).

Influenza deaths by season, South Dakota, 2002/3 - 2007/8



Influenza and pneumonia hospital discharges by age, South Dakota 2002-2006

(ICD9 CM 480-487, deduplicated)



Prevention and Control of Influenza (ACIP 2008-2009): New this season . . . .

1) All children 5-18 years be vaccinated;

2) Primary focus children 6 months-4 years;

3) Live attenuated influenza vaccine (LAIV) for healthy 2-49 year old persons.

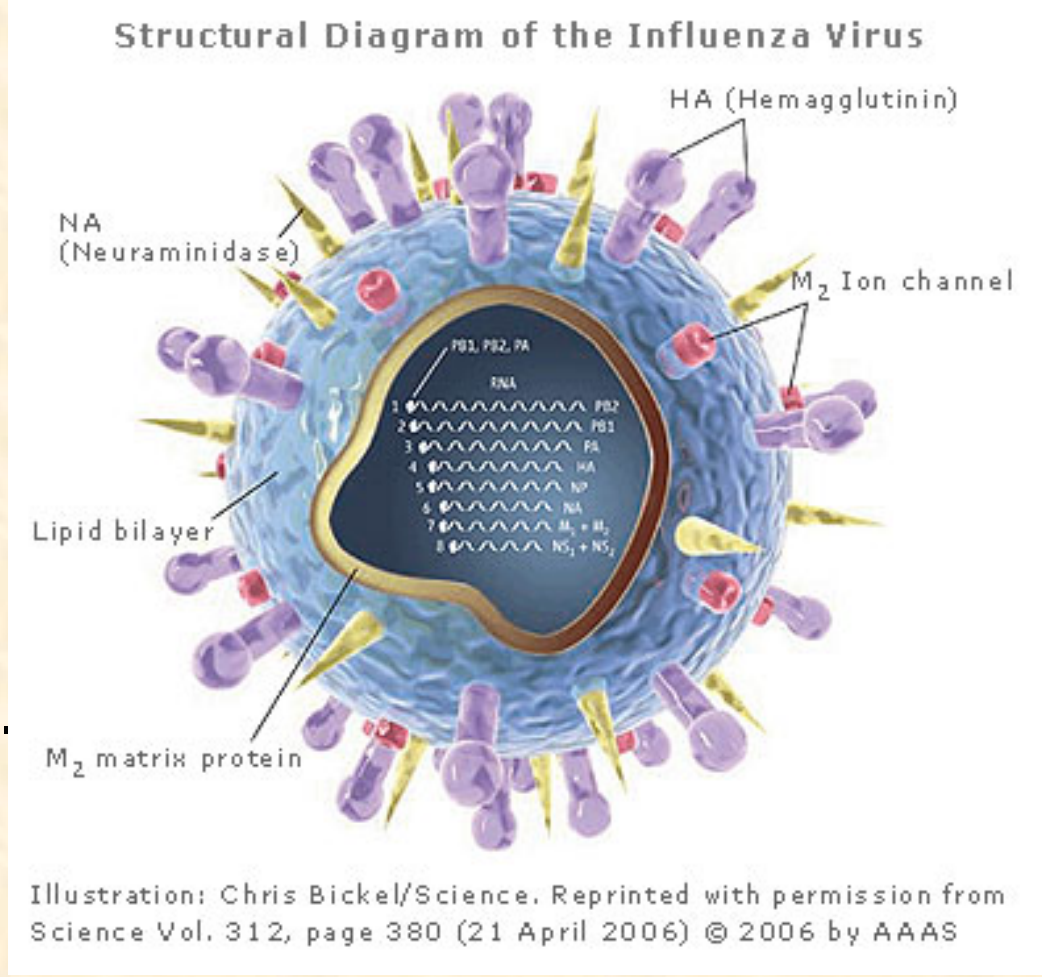
3 flu viruses + 150,000,000 eggs:

flu vaccine production (the old fashion way)

January	February	March
Surveillance Select strains Prepare reassortants Standardize antigens	Surveillance Select strains Prepare reassortants Standardize antigens	Surveillance Standardize antigens Assign potency
April	**May**	**June**
Surveillance Standardize antigens Assign potency	Surveillance Standardize antigens Assign potency Formulate--Test--Package	Surveillance Assign potency Formulate--Test--Package
July	**August**	**September**
Surveillance Assign potency Formulate--Test--Package	Surveillance Assign potency Formulate--Test--Package	Surveillance Assign potency Formulate--Test--Package
October	**November**	**December**
Surveillance Vaccinate population	Surveillance Vaccinate population	Surveillance Vaccinate population

The 2008--2009 trivalent influenza vaccine **A** and **B** virus strains

1. **A**/Brisbane/59/2007 (**H1N1**)-like,
2. **A**/Brisbane/10/2007 (**H3N2**)-like,
3. **B**/Florida/4/2006-like.

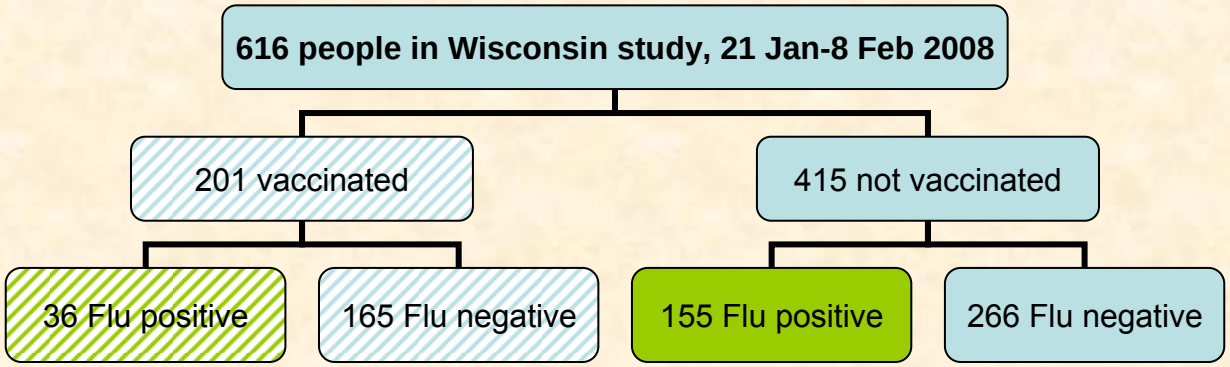


The vaccine works **(efficacy and effectiveness)**

- Influenza vaccination is the primary method for preventing influenza and its severe complications.
- LAIV: 85% efficacy
- Inactivated vaccine: 71%
- **Children 1-15 years**: 77%-91% reduction
- **Adults <65 years**: 70%-90% effective in preventing illness when the vaccine components are well matched.
- **Older adults**: 58% effective in preventing illness; 27%-70% effective in preventing hospitalizations and pneumonia;
  80% effective in preventing death.

Effectiveness of the 2007-2008 flu vaccine

- The vaccine was a suboptimal match to the circulating disease causing viruses during the 2007-08 season.
- 44% overall VE (vaccine effectiveness)
  - Influenza A: 58% VE
  - Influenza B: 35% VE



Ref: Interim within-season estimate of the effectiveness of trivalent inactivated influenza vaccine – Marshfield, Wisconsin, 2007-08 Influenza season. MMWR 18 Apr 08, 57(15): 393-398.

2008 influenza vaccination recommendations for Children and Adolescents aged 6 months–18 years (ACIP 8 August 2008)

Vaccination of all children aged 6 months–18 years should begin before or during the 2008–09 influenza season if feasible, but no later than during the 2009–10 influenza season. Vaccination of all children aged 5–18 years is a new ACIP recommendation.

Children and adolescents at high risk for influenza complications should continue to be a focus of vaccination efforts as providers and programs transition to routinely vaccinating all children and adolescents. Recommendations for these children have not changed.

2008 influenza vaccination recommendations for Children and Adolescents 6 months–18 years

(ACIP 8 August 2008)

Children and adolescents at higher risk for influenza complication are those:

1. aged 6 months–4 years;
2. who have chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological or metabolic disorders (including diabetes mellitus);
3. who are immunosuppressed (including immunosuppression caused by medications or HIV);
4. who have any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration;

2008 influenza vaccination recommendations for Children and Adolescents aged 6 months–18 years (ACIP 8 August 2008)

Children and adolescents at higher risk for influenza complication are those:

5. who are receiving long-term aspirin therapy who therefore might be at risk for experiencing Reye syndrome after influenza virus infection;
6. who are residents of chronic-care facilities; and,
7. who will be pregnant during the influenza season.

Note: Children aged <6 months should not receive influenza vaccination. Household and other close contacts (e.g., daycare providers) of children aged <6 months, including older children and adolescents, should be vaccinated.

2008 influenza vaccination recommendations for **Adults** (ACIP 8 August 2008)

Annual recommendations for adults have not changed. Annual vaccination against influenza is recommended for any adult who wants to reduce the risk for becoming ill with influenza or of transmitting it to others. Vaccination also is recommended for all adults in the following groups, because these persons are either at high risk for influenza complications, or are close contacts of persons at higher risk:

2008 influenza vaccination recommendations for Adults (ACIP 8 August 2008)

Adults at higher risk for complications or close contacts:

1. persons aged ≥50 years;
2. women who will be pregnant during the influenza season;
3. persons who have chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological or metabolic disorders (including diabetes mellitus);
4. persons who have immunosuppression (including immunosuppression caused by medications or HIV);

2008 influenza vaccination recommendations for Adults (ACIP 8 August 2008)

Adults at higher risk for complications or close contacts:

5. persons who have any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration;
6. residents of nursing homes and other chronic-care facilities;
7. health-care personnel;

2008 influenza vaccination recommendations for Adults (ACIP 8 August 2008)

Adults at higher risk for complications or close contacts:

8. household contacts and caregivers of children aged <5 years and adults aged ≥50 years, with particular emphasis on vaccinating contacts of children aged <6 months; and,
9. household contacts and caregivers of persons with medical conditions that put them at high risk for severe complications from influenza.

Influenza in child care and schools

- **Exclude children from group settings?**
- **No, unless . . . . . :**
  - The child is unable to participate and staff determine that they cannot care for the child without compromising their ability to care for the health and safety of the other children in the group.
  - The child meets other exclusion criteria, such as fever with behavior change.

American Academy of Pediatrics. 2005. MIDCC&S. p. 81.

Nato Tarkhashvili, MD
Career Epidemiology Field Officer, CDC
South Dakota Department of Health

Antiviral Agents for Influenza

Recommendations for Using Antiviral Agents for Influenza

- **Tamiflu or Relenza may be prescribed if treatment or chemoprophylaxis is indicated.**
- **Treatment should be started within 48 hours of illness onset.**
- **Tamiflu not licensed for children aged < 1year.**
- **Relenza not licensed for children aged < 7years.**

- See: MMWR 8 August 2008. Prevention and Control of Influenza. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2008

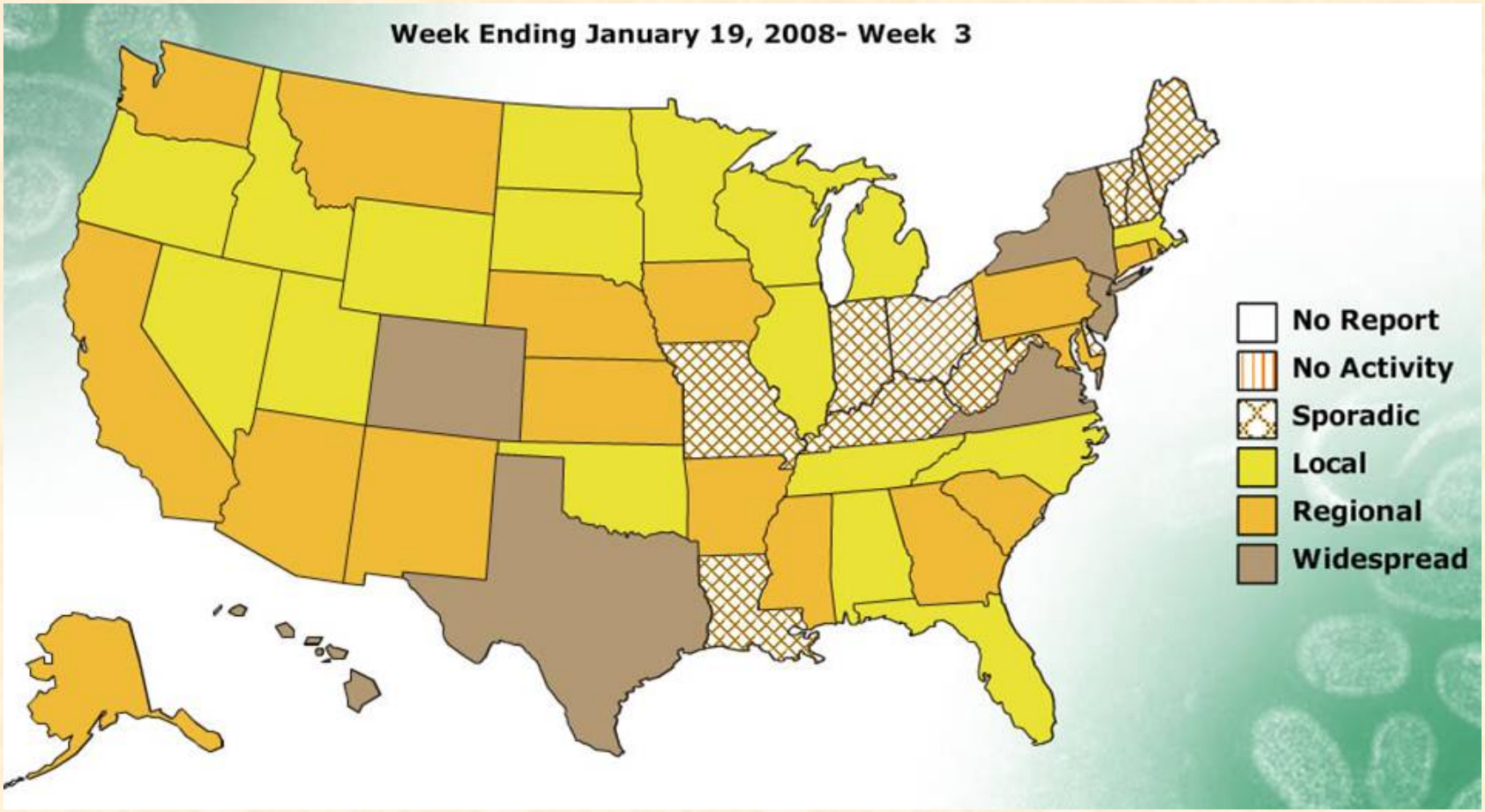
Persons for Whom Antiviral Treatment Should be Considered

- **Persons hospitalized with laboratory-confirmed influenza.**
- **Persons with laboratory-confirmed influenza pneumonia.**
- **Persons with laboratory-confirmed influenza and bacterial coinfection.**
- **Persons with laboratory-confirmed influenza infection who are at higher risk for influenza complications.**
- **Persons presenting to medical care with laboratory-confirmed influenza within 48 hours of influenza illness onset who want to decrease the duration or severity of their symptoms and transmission of influenza to others at higher risk for complications.**

Vickie Horan

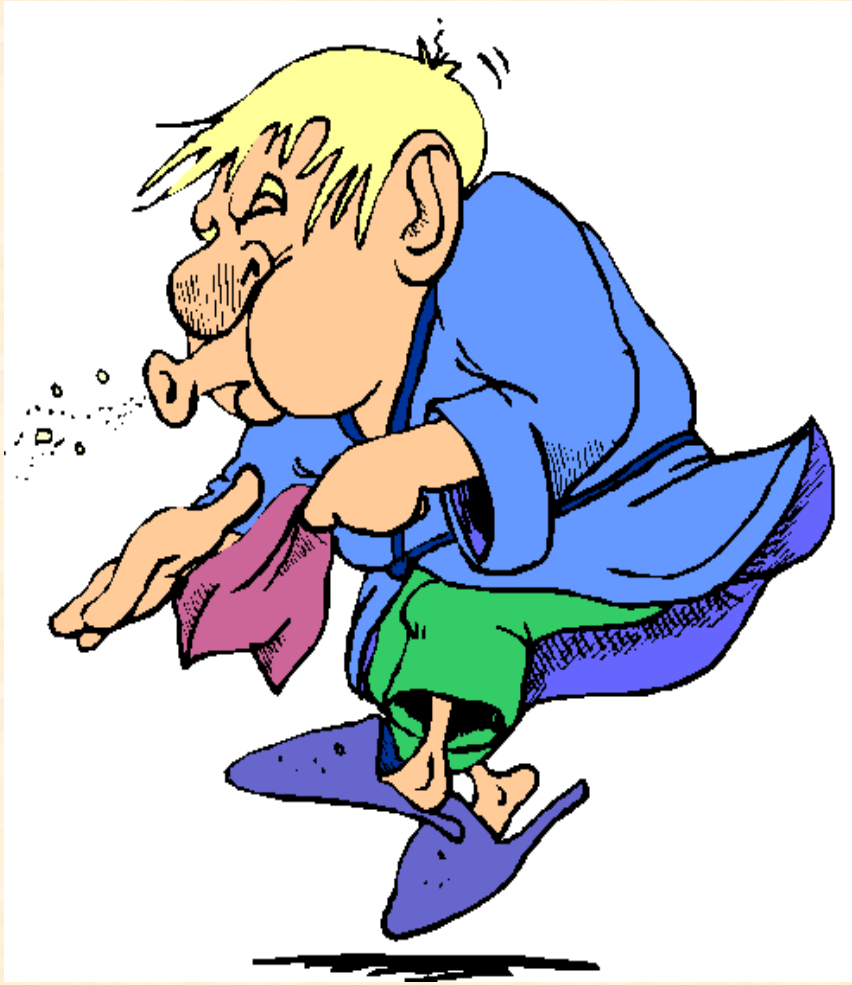
Influenza Surveillance Coordinator

Influenza Surveillance



SD Influenza Surveillance

- **Influenza surveillance is conducted year round**
- **Pediatric Influenza deaths**
  - **Children < 5 years of age**
- **Weekly aggregate Rapid Antigen reporting (Oct – May)**
- **Influenza related deaths**
- **Influenza associated hospitalizations**
- **Outbreak reporting**



What specimens should I send to the SDPHL for testing?

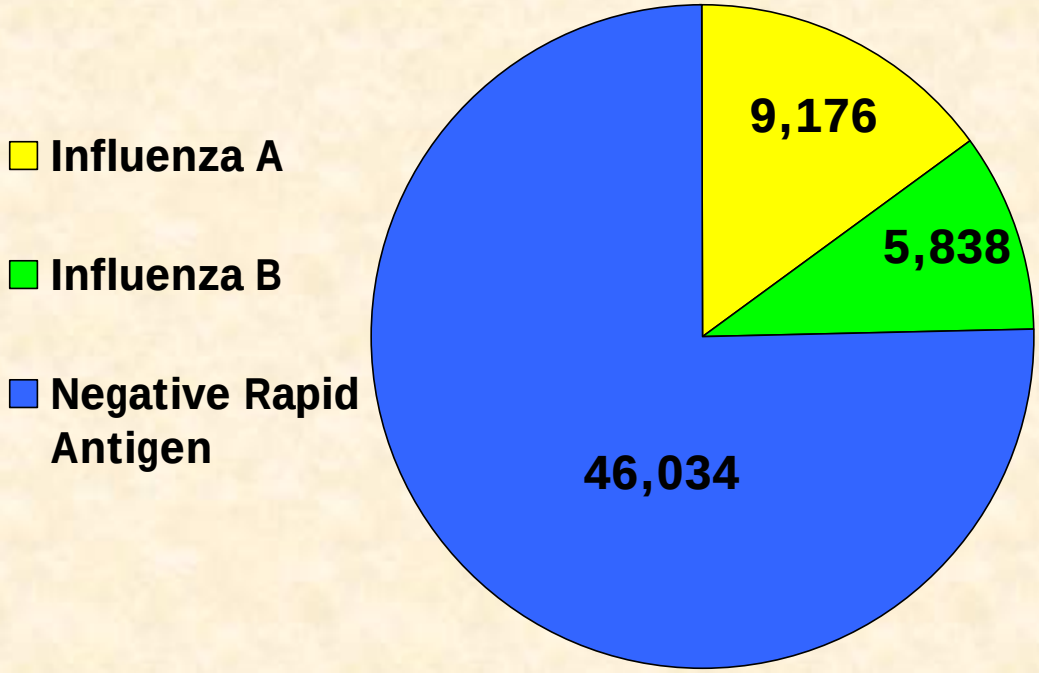
- Influenza like illness in patients who meet the CDC case definition for Influenza Like Illness (ILI).
  ILI = fever ≥ 100° F ***AND*** cough and/or sore throat (in the absence of a known cause other than influenza).
  - ILI cases early, peak, and late season (no more than 3-5 per week)
  - Unusually severe cases of influenza
  - Outbreak related cases
  - From persons receiving an antiviral agent who become ill or from their contacts who become ill
  - From persons who become ill and were immunized against influenza with the current vaccine
  - From cases of suspected animal-to-human transmission of influenza virus

Aggregate reporting of Rapid Antigen Test Results

- Weekly Reports received last year from 133 hospitals, clinics, and laboratories.
- Calculate percentage of positive test results based on the total number of tests for Influenza A or B.

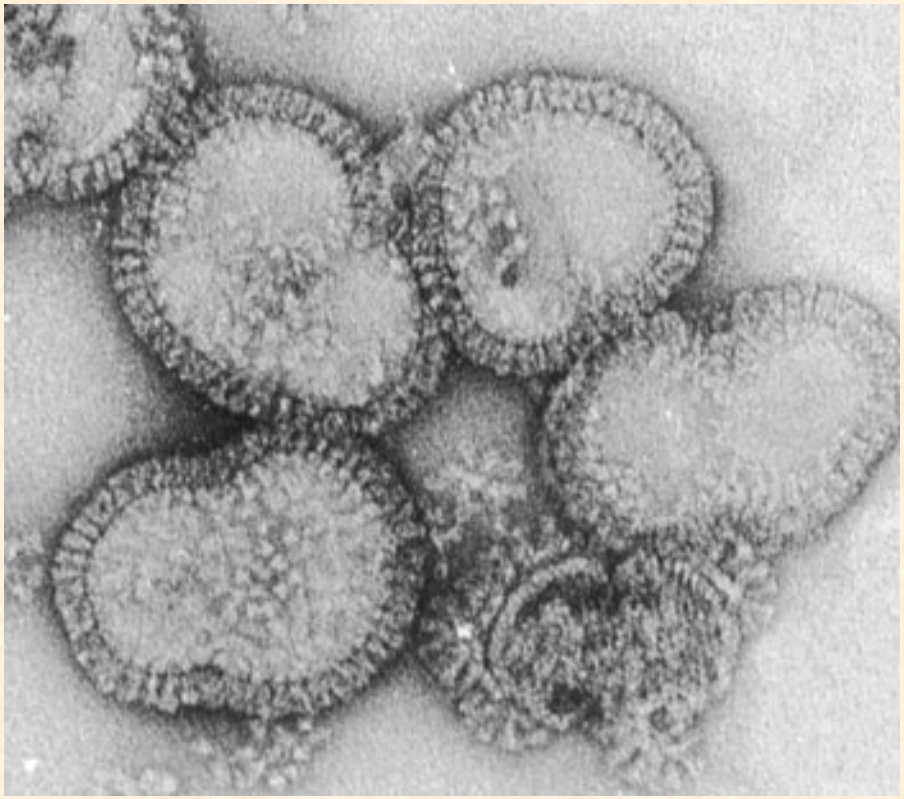
South Dakota Rapid Antigen Tests for 2007-2008 Influenza Season

(61,048 Rapid Antigen tests)

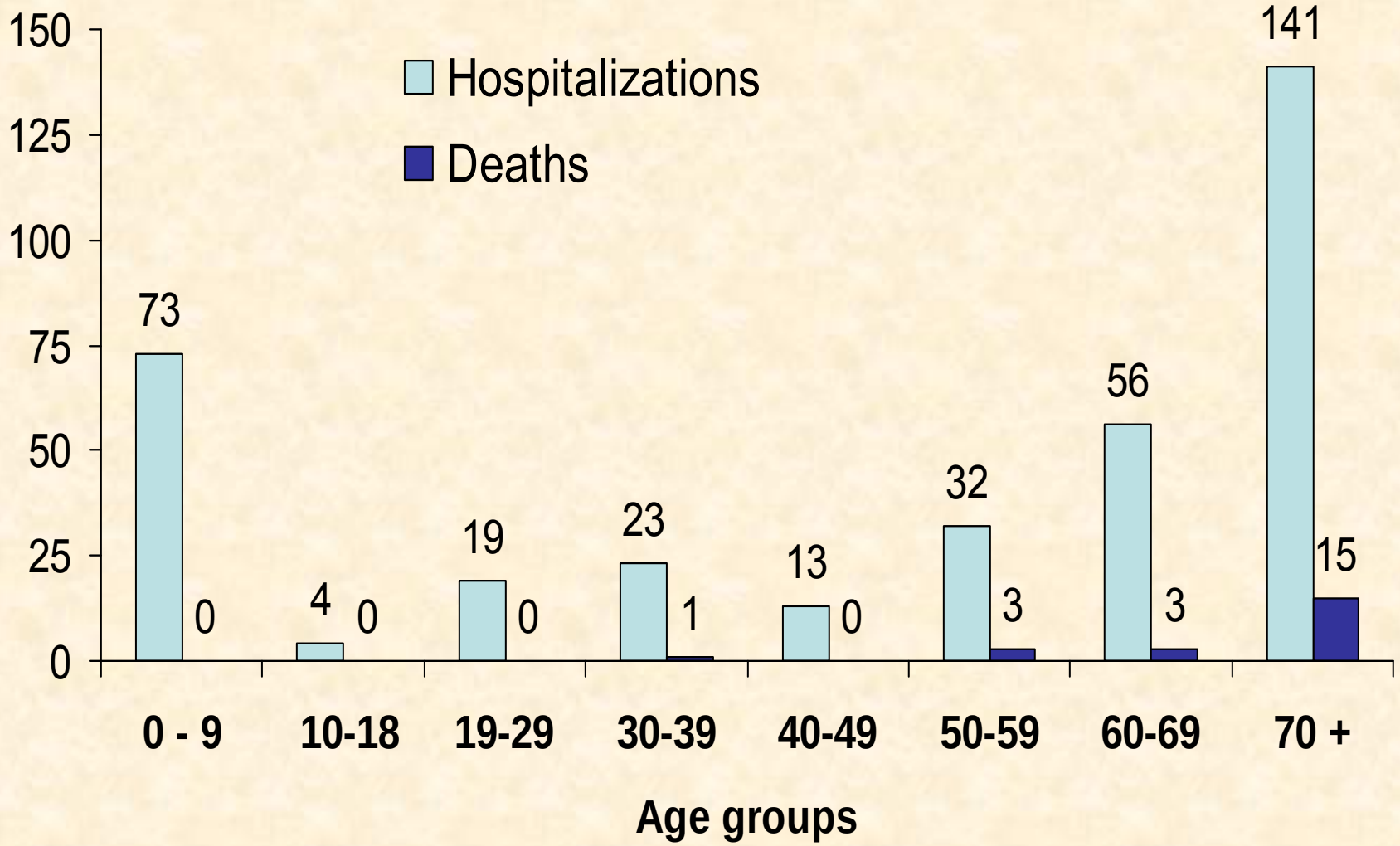


Case-based Influenza-associated Mortality and Hospitalizations

- Hospitalization or death of a person testing positive using any of the following testing methods:
  - Viral Culture
  - PCR
  - DFA
  - Rapid Antigen



Hospitalizations & Deaths by Age 2007-08 SD Influenza Season



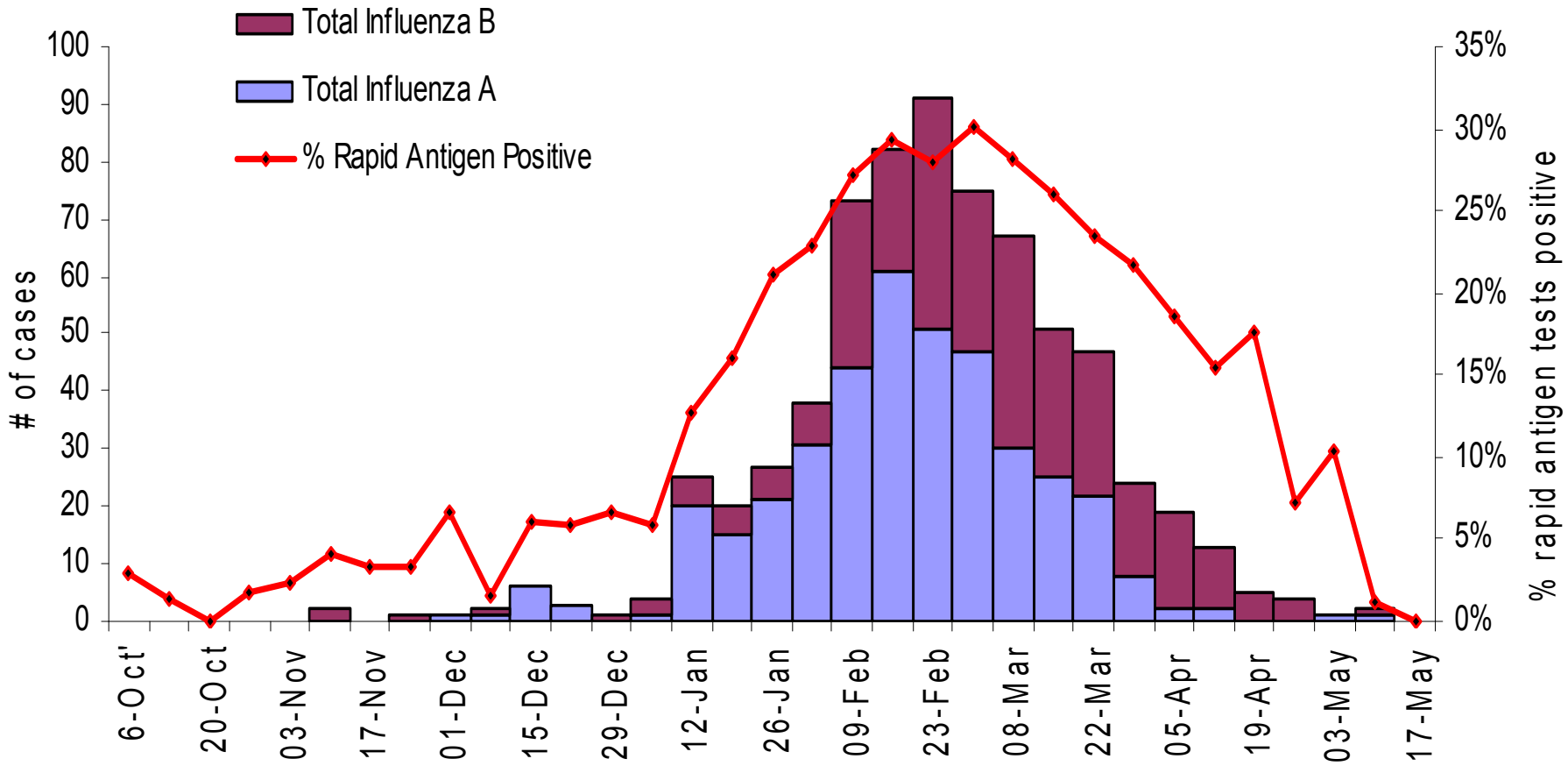
Case-based Reporting System of Laboratory Confirmed Influenza Cases

- "Confirmed influenza case" is defined as a positive test result in a person using any of the following testing methods
  - Viral culture (SDPHL)
  - PCR (SDPHL)
  - DFA (Sanford laboratories, RCRH, and Pine Ridge)

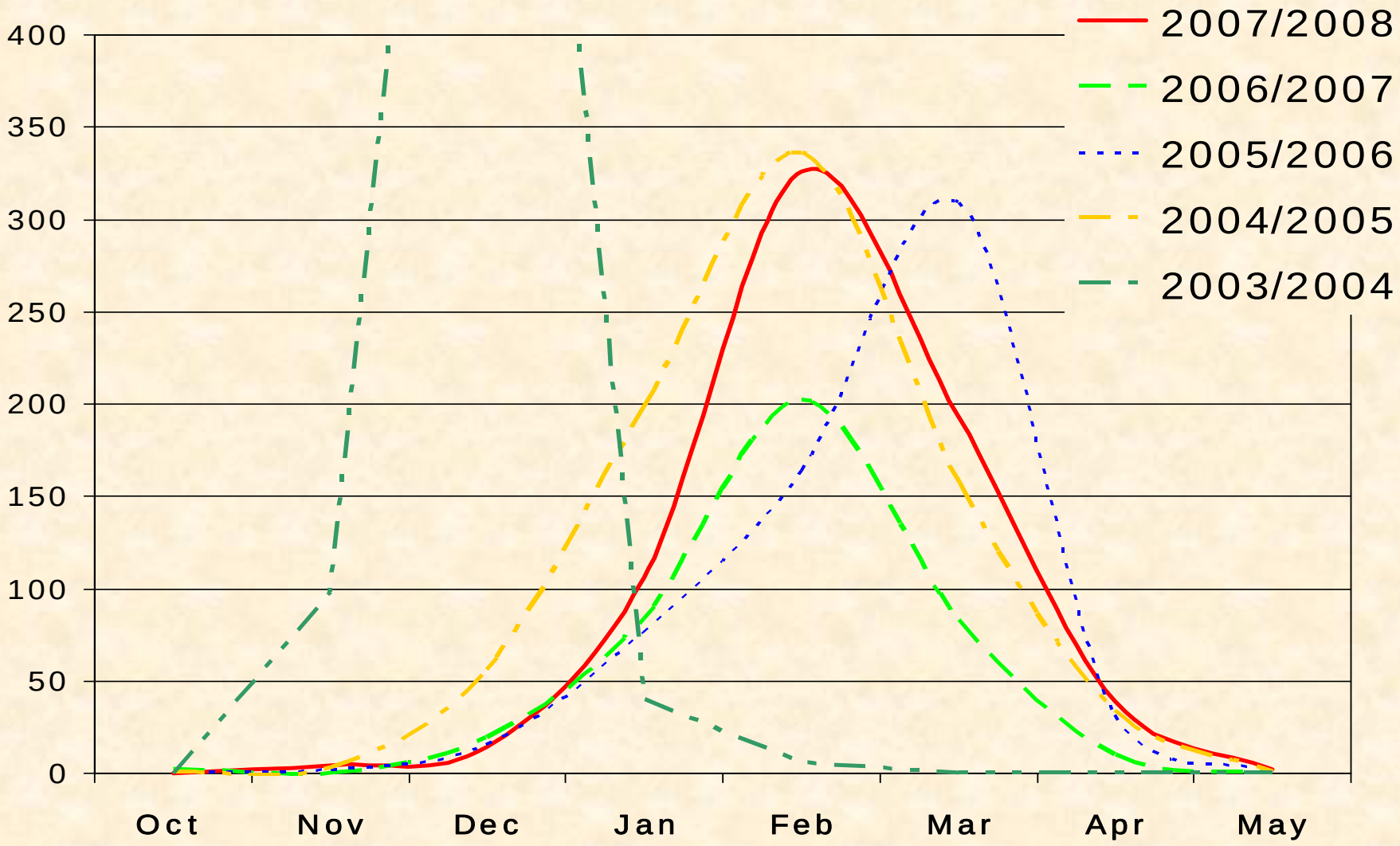
Influenza A and B cases* and % Rapid Antigen Positive

South Dakota, 2007-2008 Influenza Season

*** Confirmed by Culture, PCR, or DFA**



SD Influenza Confirmed Cases, 2003 - 2008



SD School absentee surveillance

- NEW in 2008-09 season.
- Voluntary.
- Number of students absent for illness.
  - Any illness (not just influenza-like illness),
  - Not social or family absentees.
- Weekly fax reports (773-5509).
- CHN School Nurses: please persuade your schools to report.

Tim Heath
Immunization Coordinator

Influenza Vaccine specific issues

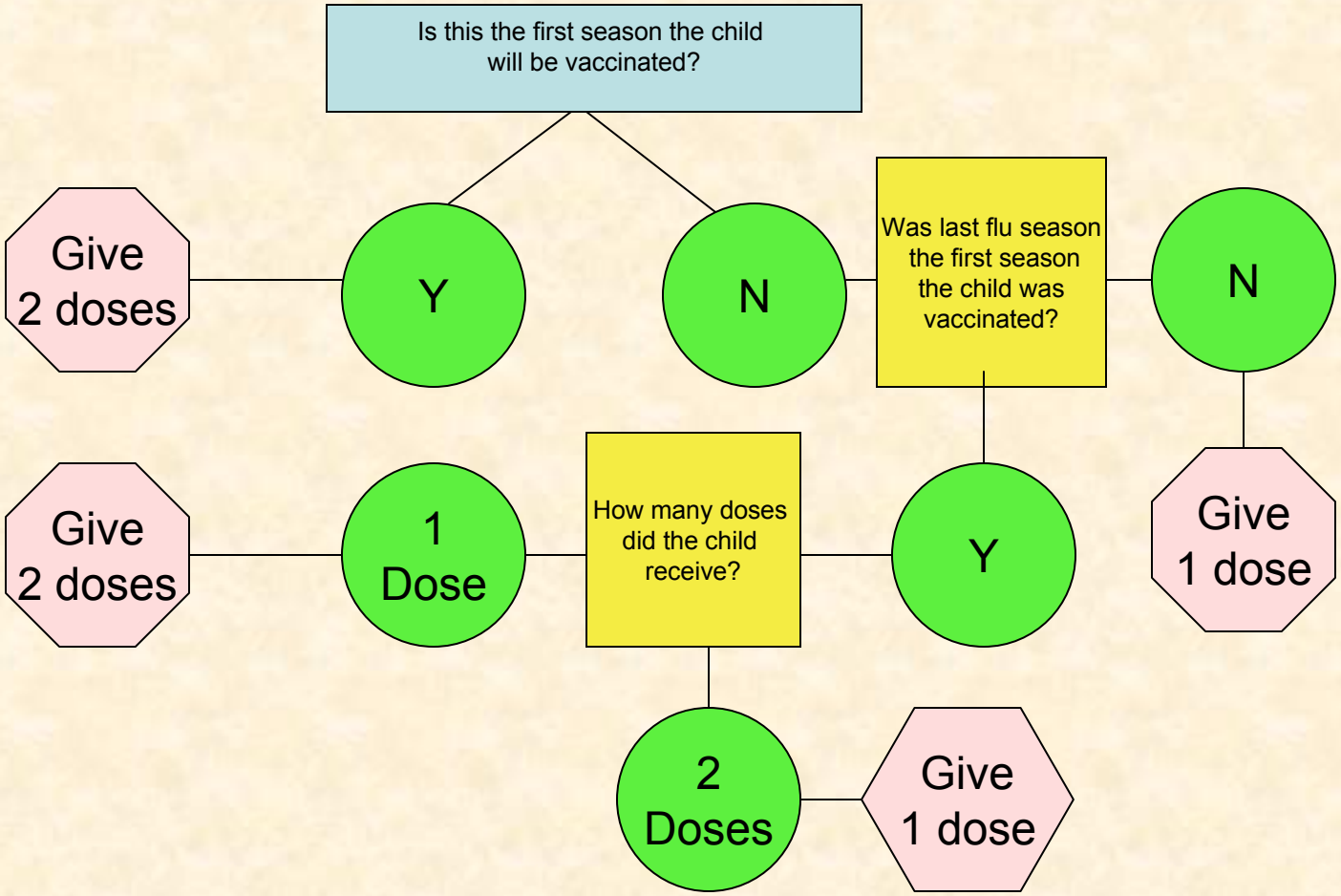
Live, attenuated influenza vaccine (LAIV) compared with inactivated influenza vaccine (TIV)

Factor	LAIV	TIV
Route of administration	Intranasal spray (NAS)	Intramuscular injection (IM)
Type of vaccine	Live virus	Killed virus
No. of included virus strains	3(2 influenza A, 1 influenza B)	3(2 influenza A, 1 influenza B)
Vaccine virus strains updated	Annually	Annually
Frequency of administration	Annually	Annually
Approval age	Healthy 2-49, not pregnant	Persons aged ≥6 months

Interval between two doses	**4 weeks**	**4 weeks**
Can be administered to family members or close contacts of immunosuppressed persons not requiring a protected environment	Yes	Yes
Can be administered to family members or close contacts of immunosuppressed persons requiring a protected environment	No	Yes
Can be administered to family members of close contacts of persons at high risk but not severely immunosuppressed	Yes	Yes

Can be simultaneously administered with other vaccines	**Yes – No data available regarding effect on safety or efficacy**	**Yes**
If not simultaneously administered, can be administered within 4 weeks of another live vaccine	**Prudent to space 4 weeks apart**	
If not simultaneously administered, can be administered within 4 weeks of an inactivated vaccine	**Yes**	**Yes**

Determining 1 or 2 doses for children 6 months through 8 years of age



Influenza Vaccines Available in the US

Manufacturer	Vaccine	Formulation	Thimerosal preservative	Age indication
Sanofi pasteur, Inc.	Fluzone® Inactivated TIV	Multi-dose vial Single-dose 0.5 mL syringe or vial Single-dose 0.25 mL syringe	Yes None None	≥6 Months ≥36 Months 6-35 Months
MedImmune Vaccines, Inc.	FluMist® LAIV	Single-dose sprayer	None	Healthy persons 2-49 years*
Novartis Vaccine	Fluvirin® Inactivated TIV	Multi-dose vial	Yes	≥4 years
GlaxoSmith Kline, Inc.	Fluarix™ Inactivated TIV FluLaval™ Inactivated TIV	Single-dose 0.5 mL syringe Multi-dose vial	<1 μg Hg/0.5 mL dose Yes	≥18 years ≥18 years

Bonnie Jameson
Disease Prevention Administrator

2008 vaccine supply

"Stop It, Don't Spread it!"

and

Why Flu Vaccination Matters

www.youtube.com/user/cdcflu

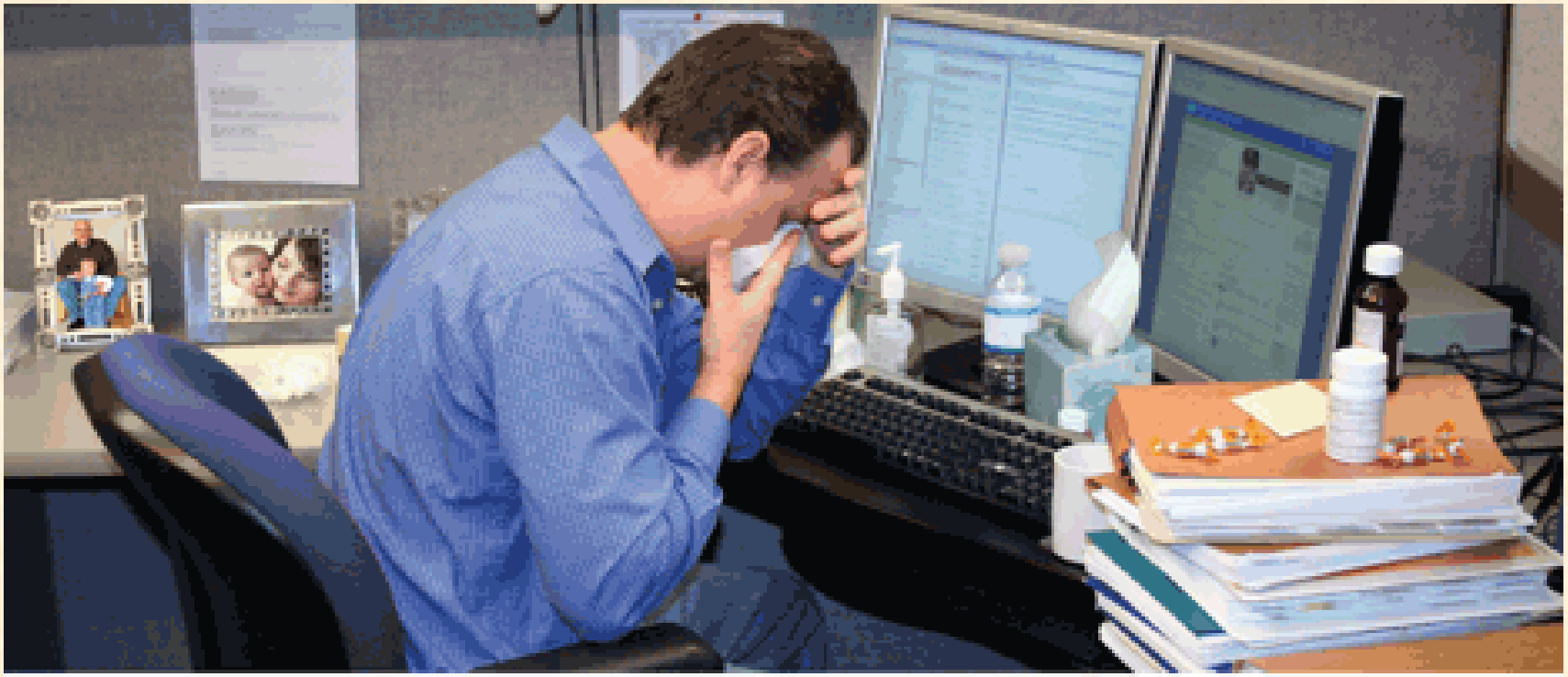
Influenza Vaccine Supply for 2008-2009 Season: Key Messages

- Vaccine manufacturers project as many as 146 million doses of influenza vaccine will be available from currently licensed US manufacturers.
- Manufacturers project as many as 50 million doses of thimerosal-free or preservative-free (trace thimerosal) influenza vaccine.
- To date **33,430** doses of flu vaccine have been shipped to private providers, an additional 24,440 doses were ordered to be shipped this week.

"Stop It, Don't Spread It"

Poster can be downloaded
http://doh.sd.gov/Flu/PDF/2006StopIt.pdf

South Dakota Dept of Health



Why didn't I get my flu vaccine?

Influenza (the "flu") can be a **very serious disease**. Even healthy adults can get sick and miss work. If you get the flu, you can spread it to family, friends, or co-workers.

DON'T GET THE FLU. DON'T SPREAD THE FLU.
GET VACCINATED.

CDC

Free flu materials can also be downloaded from the CDC site at www.cdc.gov/flu/professionals/flugallery/index.htm

If your kids are a size…

small medium large

then they need a flu vaccine.

Flu protection is recommended in sizes 6 months to 18 years.
Influenza (the "flu") can be a serious disease for children of all ages, causing them to miss school, activities, or even be hospitalized. CDC recommends flu vaccination for all children from ages 6 months through 18 years.

www.cdc.gov/flu
800-CDC-INFO (800-232-4636)

Why Flu Vaccination Matters
www.youtube.com/user/cdcflu


Discussion
Questions
Answers
Quiz

1. Why should we target adults who are age 50 years and older, I thought it was suppose to be 65 years and older?
2. I've heard that almost 75% of people in the U.S. are already recommended for influenza vaccination. I don't understand why we don't just have universal influenza vaccination. It would be so much easier than assessing the risk of each patient.
3. How late in the season can I vaccinate my patients with influenza vaccine?
4. Which travelers are recommended to be vaccinated?
5. If an unvaccinated patient who has just recovered from a diagnosed case of influenza comes into our clinic, should we vaccinate him?
6. How long does immunity from influenza vaccine last?
7. Some of my patients refuse influenza vaccination because they insist they "got the flu" after receiving the injectable vaccine in the past. What can I tell them?
8. Are there recommendations for the prevention of institutional outbreaks of influenza?
9. What is the recommended interval for receiving influenza vaccine after an allergy injection?
10. Children under 9 years old need 2 doses of influenza vaccine. Should 2 doses be given each year until the child turns 9?
11. If a child receives influenza vaccine at age 34 or 35 months for the first time (0.25 mL dose) and then returns for the second dose at age 37 months, should we give another 0.25 mL dose or should we give the 0.5 mL dose that is indicated for ages 3 and older?
12. A 5-year-old child received her second MMR a week ago. How long should she wait before receiving LAIV?
13. Is influenza vaccine recommended for pregnant women?
14. Should siblings of persons with a high-risk condition receive influenza vaccine even though the patient received the vaccine?

Answers, go to: www.immunize.org/askexperts/experts_inf.asp

15. Do diabetics who control their disease with diet need influenza vaccine?
16. Is influenza vaccine safe to administer to patients with multiple sclerosis?
17. Does influenza vaccine increase the HIV titer in the blood of people with HIV infection?
18. Which healthcare personnel should be vaccinated against influenza?
19. Which employees of chronic care facilities and nursing homes should be vaccinated against influenza?
20. What are the ACIP recommendations for influenza vaccination of healthcare personnel?
21. For whom is influenza vaccine contraindicated?
22. Can LAIV be administered to persons with minor acute illnesses, such as a mild upper respiratory infection (URI) with or without fever?
23. If someone receives live attenuated influenza vaccine, should they be cautioned to wait four weeks before becoming pregnant?
24. Can a woman who is breastfeeding receive LAIV?
25. Can LAIV be given to contacts of immunosuppressed patients?
26. Is LAIV contraindicated for asthmatics?
27. Some injectable influenza vaccine comes with a 5/8" needle attached. I thought we were supposed to use a 1-1½" needle for this IM vaccine in adults.
28. Sometimes I am unable to get 10 doses of influenza vaccine out of a 5.0 mL (10-dose) vial. Do you have any suggestions?
29. How should LAIV and TIV be stored?

Answers, go to: www.immunize.org/askexperts/experts_inf.asp